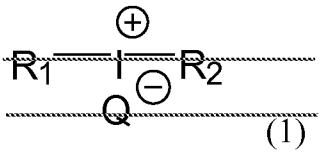
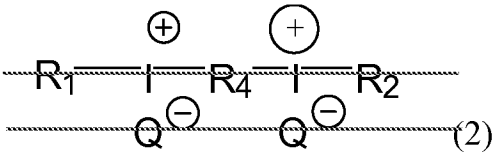
Amendments to the Claims

This is a complete listing of claims and supersedes all other listings:

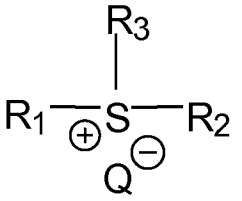
1. (currently amended) A method for producing an onium salt derivative, characterized by comprising reacting an onium salt which has a halide Q as an anion moiety and which is represented by any one of formulas (3) or (4) ~~(1) through (4)~~:



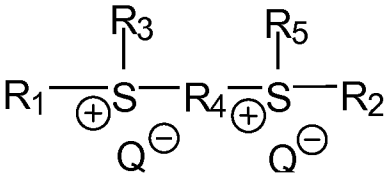
(1)



(2)



(3)

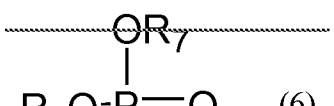


(4)

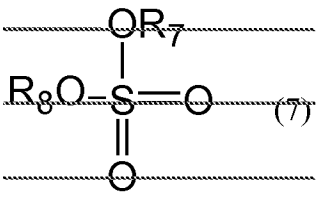
wherein each of R_1, R_2, R_3, and R_5 represents an alkyl group, a cycloalkyl group, a perfluoroalkyl group, an aromatic organic group, an aralkyl group, or a phenacyl group, each of these groups having ≤25 carbon atoms and being optionally substituted; one or both of the pairs of R_1 and R_3, and R_2 and R_5 may together form a divalent organic group; R_4 represents a C≤20 divalent organic group; and Q represents a halide anion,

with an ester compound which has an alkyl group R_7 and which is represented by ~~any one of formulas~~ formula (5) ~~through (7)~~:

(5)



(6)

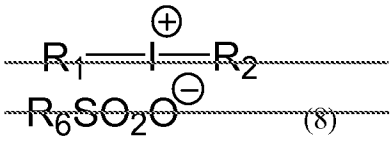


(7)

wherein R_6 represents an alkyl group, a cycloalkyl group, a perfluoroalkyl group, an aromatic organic group, or an aralkyl group, each of these groups having ≤25 carbon atoms and being

optionally substituted; R_7 represents an alkyl group, having ≤5 carbon atoms and being optionally substituted; ~~and each of R_8 and R_9 represents an alkyl group, a cycloalkyl group, a perfluoroalkyl group, or an aralkyl group, each of these groups having ≤10 carbon atoms and being optionally substituted~~,

to thereby form R_7Q through nucleophilic attack by the halide Q on the alkyl group R7 of the ester compound ~~comound~~, and to also produce an onium salt derivative which is formed of an anion represented by ~~any one of~~ R_6SO_2O-, ~~$PO_4R_8R_9$-, and R_8SO_4-~~ derived from the ester compound and an onium cation derived from the onium salt, an onium salt derivative represented by ~~one of~~ formulas (10) or (11) ~~(8) through (19)~~.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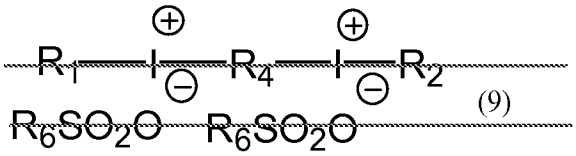
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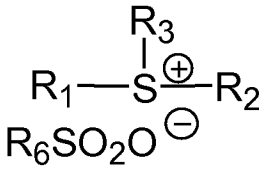
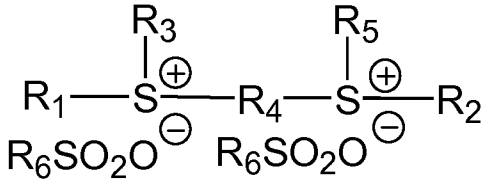

(10)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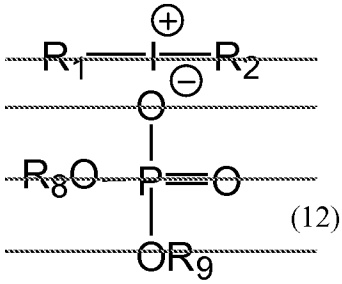
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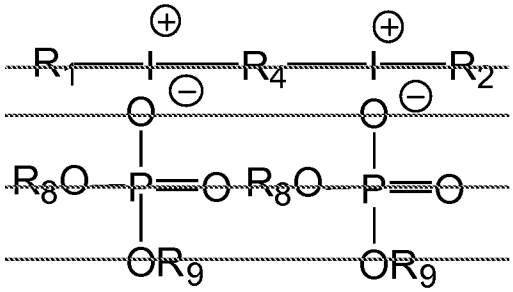
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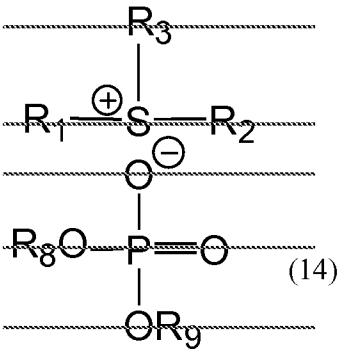
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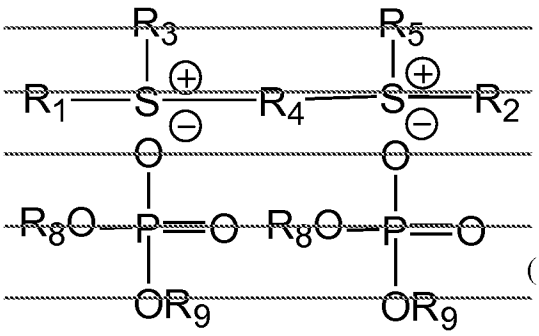
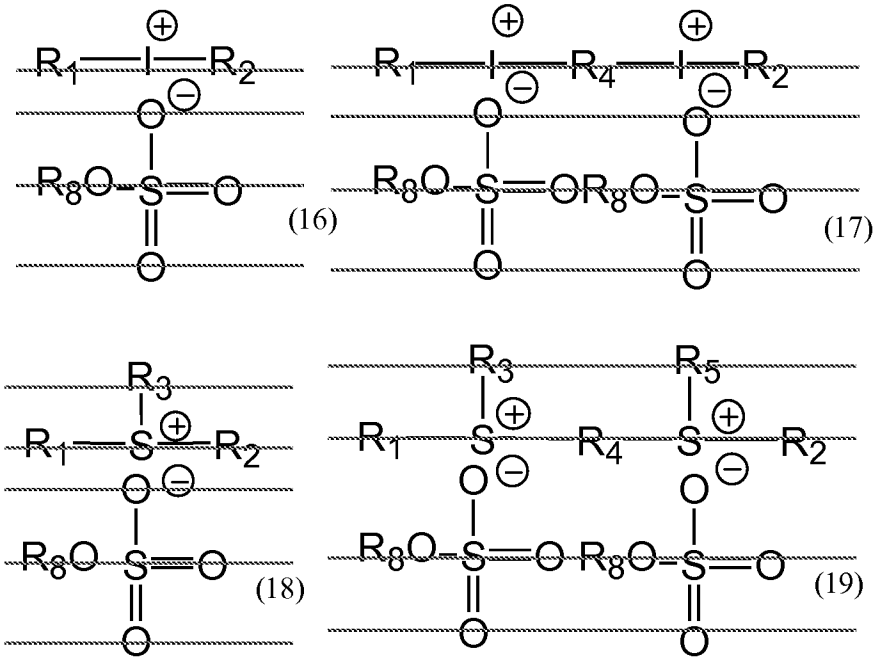

(15)



(16) (17)

(18) (19)

2. (canceled)

3. (original) A method for producing an onium salt derivative according to claim 1, wherein reaction is carried out while removing generated R_7Q from the reaction system.

4. (previously amended) A method for producing an onium salt derivative according to claim 1 or 3, wherein the reaction is carried out in a solvent.

5. (canceled)

6. (canceled)

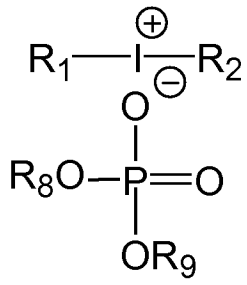
7. (canceled)

8. (canceled)

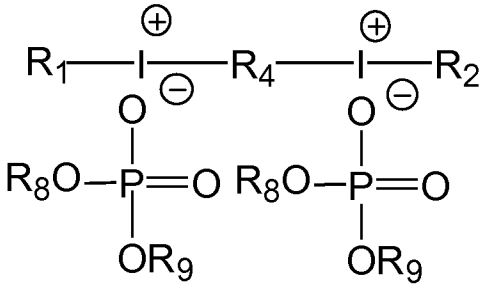
9. (canceled)

10. (canceled)

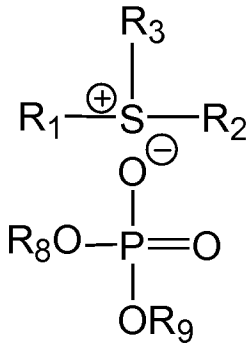
11. (Withdrawn) An onium compound which has a phosphate derivative as an anion moiety and which is represented by any one of formulas (12) through (15):



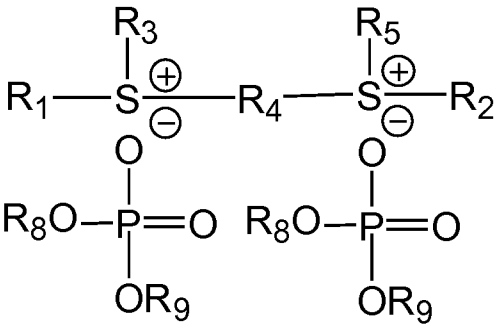
(12)



(13)



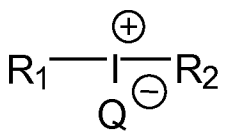
(14)



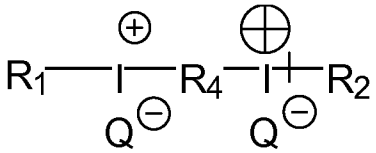
(15)

wherein each of R_1, R_2, R_3, and R_5 represents an alkyl group, a cycloalkyl group, a perfluoroalkyl group, an aromatic organic group, an aralkyl group, or a phenacyl group, each of these groups having ≤25 carbon atoms and being optionally substituted; one or both of the pairs of R_1 and R_3, and R_2 and R_5 may together form a divalent organic group; R_4 represents a C≤20 divalent organic group; and each of R_8 and R_9 represents an alkyl group, a cycloalkyl group, a perfluoroalkyl group, or an aralkyl group, each of these groups having ≤10 carbon atoms and being optionally substituted.

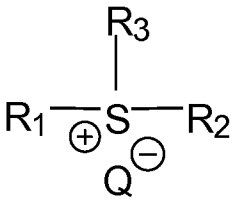
12. (withdrawn) A method for producing an onium salt derivative, characterized by comprising reacting an onium salt which has a halide Q as an anion moiety and which is represented by any one of the following formulas (1) through (4):



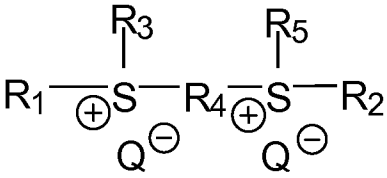
(1)



(2)



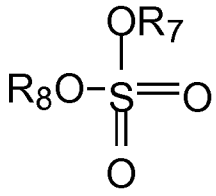
(3)



(4)

wherein each of R_1, R_2, R_3, and R_5 represents an alkyl group, a cycloalkyl group, a perfluoroalkyl group, an aromatic organic group, an aralkyl group, or a phenacyl group, each of these groups having ≤25 carbon atoms and being optionally substituted; one or both of the pairs of R_1 and R_3, and R_2 and R_5 may together form a divalent organic group; R_4 represents a C≤20 divalent organic group; and Q represents a halide anion,

with an ester compound which has an alkyl group R_7 and which is represented by any one of formulas (6) or (7):



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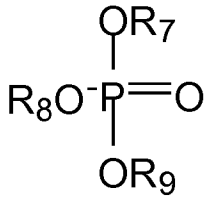


(6)

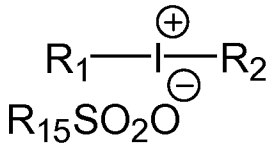
wherein R_7 represents an alkyl group, having ≤5 carbon atoms and being optionally substituted; and each of R_8, and R_9 represents an alkyl group, a cycloalkyl group, a perfluoroalkyl group, or an aralkyl group, each of these groups having ≤10 carbon atoms and being optionally substituted;

to thereby form R_7Q through nucleophilic attack by the halide Q on the alkyl group R7 of the ester comound, and to also produce an onium salt derivative which is formed of an anion represented by $PO_4R_8R_9$- or R_8SO_4- derived from the ester compound and an onium cation derived from the onium salt; and reacting the onium salt derivative with a sulfonic acid derivative represented by formula (24):

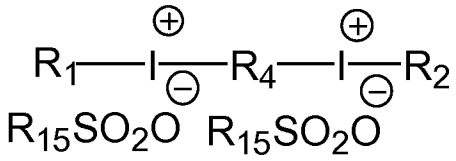
$R_{15}SO_2OY$ (24)

wherein R_{15} represents an alkyl group, a cycloalkyl group, a perfluoroalkyl group, an aromatic organic group, or an aralkyl group, each of these groups having ≤25 carbon atoms and being optionally substituted; and Y represents a hydrogen atom, an alkali metal, or ammonium,

to thereby cause salt exchange and yield an onium salt derivative represented by one of formulas (25) through (28).



(25)



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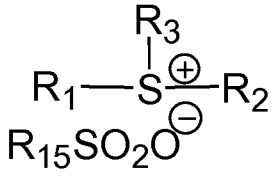

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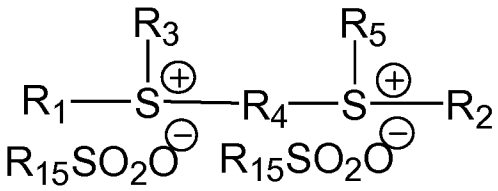

(28)

13. (withdrawn) A method for producing an onium salt derivative according to claim 12, wherein each of R_7, R_8 and R_9 is a methyl group or an ethyl group.